

SAKHNOVSKAYA, G.K. [Sakhnovs'ka, H.K.]; SHABLOVSKAYA, Ye.A. [Shablovs'ka, Ye.O.]; DOVZHANSKIY, S.I. [Dovzhans'kyi, S.I.]

Effect of microcide on the staphylococcal flora in chronic diffuse strepto-staphylo-derma. Mikrobiol.zhur. 23 no.1:67-69 '61.
(MIRA 14:5)

1. L'vovskiy institut epidemiologii, mikrobiologii i gigieny.
(MICROCIDE) (STAPHYLOGOCCAL INFECTIONS)
(STREPTOCOCCAL INFECTIONS)

CHERNAYA, L.A., prof.; KOVTUNOVICH, L.G.; SAKHNOVSKAYA, G.K.

Large-scale immunization against tetanus. Sov. med. 25 no.9:94-97
S '61. (MIRA 15:1)

1. Iz L'vovskogo instituta epidemiologii, mikrobiologii i gigiyeny.
(UKRAINE--TETANUS)

L 1362-66

ACCESSION NR: AP5024573

UR/0219/64/058/008/0105/0107

AUTHOR: Sakhnovskaya, G. K.; Orlik, V. A.

TITLE: Certain immunological reactions in experimental burns

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 58, no. 8, 1964, 105-107

TOPIC TAGS: injury, immunology, experiment animal, blood, therapeutics

ABSTRACT: Experimental burns produce changes in phagocytic activity of leucocytes which are correlated with the stage of the pathological process. When burned animals are given transfusions of plasma from animals which have recovered from burns, there is a marked increase in phagocytic activity. Orig. art. has: 1 graph.

ASSOCIATION: L'vovskiy nauchno-issledovatel'skiy institut perelivaniya krovi (L'vov Scientific Research Institute for Blood Transfusion)

SUBMITTED: 01Jun62

ENCL: 00

SUB CODE: LS

NR REF SOV: 000

OTHER: 001

JPRS

Card 1/1

SAKHNOVSKAYA, G.K.; ORLIK, V.A.

Effect of plasma transfusions from burn convalescents on the toxic properties of sera in experimental burn diseases. Gemat. i perel. krovi 1830-32 '65. (MIRA 18:10)

1. L'vovskiy institut perelivaniya krovi.

SAKHNOVSKAYA, G.K.

Changes in the blood serum properties toxic to parameciums in
experimental burns. Pat. fiziol. i eksp. terap. 9 no.1:56-59
Ja-F '65. (MIRA 18:11)

1. L'vovskiy nauchno-issledovatel'skiy institut perelivaniya
krovi (direktor - dotsent D.G. Petrov).

SHOYKHET, P.A.; SAKHNOVSKAYA, N.D.

Some geochemical prospecting data on the botton of the Caspian
Sea. Trudy AzNII DN no.4:323-334 '56. (MIRA 14:4)
(Caspian Sea—Geochemical prospecting)

SAKHNOVSKAYA, N.N.; TJRETSKAYA, E.S.

Sanitary characteristics of the sewage waters of the Rozdol
sulfur pits. Vrach. delo no.3:114-117 Mr '64. (MIRA 17:4)

1. L'vovskiy institut epidemiologii, mikrobiologii i gigiyeny.

ALEKSEYEVA, P.A.; SAKHNOVSKAYA, Ye.M., inzhener-tekhnolog zavoda.

"Rapid methods of chemical analysis used in the leather substitute industry." E.S. Khoroshaia, A.A. Avilov. Reviewed by P.A. Alekseeva, E.M. Sakhnovskaia. Leg.prom. 15[i.e. 16] no.6:48 Je '56.
(MLRA 9:8)

1. Nachal'nik laboratorii zavoda Mosplastkosh No. 2 (for Alekseyeva).
(Leather substitutes) (Khoroshaia, E.S.) (Avilov, A.A.)

SAKHNOVSKAYA, Zh.

In the miners' club. Mast.ugl. 5 no.2:24a-24b F '56. (MLBA 9:6)
(Coal miners)

SAKHNOVSKAYA, Zh.
SAKHNOVSKAYA, Zh.

Miners are studying. Mast.ugl. 6 no.10:16a-16c 0 '57. (MIRA 10:12)
(Mining engineering--Study and teaching)

57K HAOV SHI 17, 2A
SAKHNOVSKAYA, Zh.

"Oktabr'skaia." Mast. ugl. 6 no.12:8a-8b D '57. (MIRA 11:1)
(Donets Basin--Coal mines and mining)

SAKHNOVSKAYA, Zh.

They came out in front. Mast. ugl. 7 no.1:10 Ja '58. (MIRA 11:2)
(Donets Basin--Coal miners)

SAKHNOVSKAYA, Zh.

For miners in the Arctic Regions. Mast. ugl. 7 no.11:27 N '58.

(MIRA 11:12)

(Pechora Basin--Coal mines and mining)

(Pechora Basin--Food supply)

SAKHNOVSKAYA, Zh.

They are the hope of the future. Mast. ugl. 8 no.2:17-18
F '59. (MIRA 13:4)

(Communist youth)

SAKHNOVSKAYA Zh.

"The miner's soul" by A. Ionov. Reviewed by Zh. Sakhnovskaia.
Mast. ugl. 8 no. 3:21 Mr '59. (MIRA 13:4)
(Miners in literature and art) (Ionov, A.)

SAKHNOVSKAYA, Zh.

There are striding giants here. Mast. ugl. 9 no. 9:16-17 S'60.
(MIRA 13:10)
(Cheremkovo Basin--Excavating machinery)

SAKHNOVSKAYA, Zh.

Scholarships for miners. Sov.shakht. 10 no.5:33 My '61.
(MIRA 14:9)
(Coal miners--Education and training)

CHEBANENKO, V.; KRASYUK, A.; TARASOV, V.; SAKHNOVSKAYA, Zh.

Who is entrusted with the management of the club? Sov.shakht.
10 no.6:38-39 Je '61. (MIRA 14:9)

1. Chlen smotrovoy komissii Stalinskogo raykoma ugol'shchikov (for Chebanenko).
 2. Chlen pravleniya kluba shakhty No.7 "Trudovskaya" (for Krasyuk).
 3. Chlen pravleniya kluba shakhty No.10 "Chekist" (for Tarasov).
 4. Korrespondent zhurnala "Sovetskiy shakhter" (for Sakhnovskaya).
- (Working-men's clubs)

SAKHNOVSKAYA, Zh.

"Shoots." Reviewed by Zh.Sakhnovskaia. Sov.shakht. 10
no.12:35 D '61. (MIRA 14:12)
(Miners in literature and art)

SAKHNOVSKAYA, Zh.

There where the blue road meanders. Sov. shakh. 11 no.10:
44-45 0 '62. (MIRA 15:9)
(Volga River)

SAKHNOVSKIY, A.G., inzhener.

Hydroplastic clamps for heavy metal-cutting machines. [Izd]
LONITOMASH 24 92-128 '51. (MIRA 8:2)

1. Konstruktorskoye byuro MSS.

(Plastics)(Machine tools--Accessories and attachments)

KLIMOVSKIY, L.L. [Klymovs'kiy, L.L.]; SAKHNOVSKIY, A.Z. [Sakhnovs'kiy, A.S.]

Ultrasonic system for the preparation of emulsions with
automatic oil proportioning. Leh. prom. no.2:9-11 Ap-Je '63
(MIRA 16:7)

1. Khar'kovskiy kanatnyy zavod)

(Emulsions)

(Ultrasonic waves—Industrial applications)

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S/040/62/026/003/016/020
D407/D301

24 674
26.1410
AUTHORS:

Sakhnovskiy, E.G., and Uflyand, Ya.S. (Leningrad)

TITLE:

Effect of anisotropic conductivity on unsteady flow of a conducting gas in a flat channel

PERIODICAL:

Priladnaya matematika i mekhanika, v. 26, no. 5, 1962, 542 - 547

TEXT: Unsteady flow of a weakly ionized inviscid gas between parallel plates is investigated in the presence of a transverse magnetic field. It is assumed that $\omega_i \tau_i \ll 1$ for ions (ω being the cyclotron frequency and τ the mean time-interval between collisions). This permits neglecting ion-slip (with respect to the gas). After introducing dimensionless quantities:

$$u = \frac{v}{v_0}, \quad h = \frac{\Pi}{H_0}, \quad e = \frac{E}{v_0 H_0}, \quad \zeta = \frac{z}{a}, \quad \tau = \frac{v_0 t}{a} \quad (1.3)$$

$$P = \frac{P_x a}{\rho v_0^2}, \quad R_m = 4\pi \sigma a v_0, \quad S = \frac{H_0^2 \sigma a}{\rho v_0}, \quad \beta = \omega_i \tau^* \frac{H_0}{H} = \frac{e}{m} H_0 \tau^*$$

(where a is half the distance between the plates), the equations of

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Effect of anisotropic conductivity ... S/040/62/026/003/016/020
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magnetohydrodynamics become

$$\begin{aligned} \frac{\partial h_x}{\partial \tau} &= \frac{1}{R_m} \left(\frac{\partial^2 h_x}{\partial \xi^2} + \beta \frac{\partial^2 h_y}{\partial \xi^2} \right) + \frac{\partial u_x}{\partial \xi}, & \frac{\partial h_y}{\partial \tau} &= \frac{1}{R_m} \left(\frac{\partial^2 h_y}{\partial \xi^2} - \beta \frac{\partial^2 h_x}{\partial \xi^2} \right) + \frac{\partial u_y}{\partial \xi} \\ \frac{\partial u_x}{\partial \tau} &= P + \frac{S}{R_m} \frac{\partial h_x}{\partial \xi}, & \frac{\partial u_y}{\partial \tau} &= \frac{S}{R_m} \frac{\partial h_y}{\partial \xi} \end{aligned} \quad (1.4)$$

The Laplace transform is applied to these equations and the general solution of the problem is obtained. Thereby the formulas for the velocities u_x and u_y are:

$$u_x = P\tau + \operatorname{Re} \psi, \quad u_y = -\operatorname{Im} \psi \quad (2.18)$$

where

$$\psi = -\frac{PS}{R_m} \frac{1}{2\pi i} \int_{b-i\infty}^{b+i\infty} \frac{\gamma \operatorname{ch} \gamma \xi}{p/\gamma \operatorname{ch} \gamma + \sqrt{p/R_m} \operatorname{sh} \gamma} \frac{\exp(p\tau)}{p^2} dp \quad (2.19)$$

In general, the calculations for reducing the obtained solution to real form, are rather cumbersome. Therefore the author considers only the particular case of ideally conducting walls, which can be solved readily. By using the theorem of residues, the solution of the problem is obtained in real form. It was found that in the case

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Effect of anisotropic conductivity ... S/040/62/026/003/016/020
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of ideally conducting walls, a stationary regime exists, in which the gas flows uniformly (with velocity v_x^0) in the direction of the applied pressure gradient P_x , and also (with velocity v_y^0) in the perpendicular direction. Thereby, a direct current flows through the gas. By setting $\beta = 0$, one obtains the solution for the case of isotropic conductivity. Thereby the transient regime is aperiodic. With $\beta \neq 0$ (anisotropic conductivity), the transient regime assumes an entirely different character: oscillations of frequency β arise at any (arbitrarily small) magnetic Reynolds number R_m . There are 4 figures.

SUBMITTED: February 3, 1962

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L 9911-63. EPR/EPA(b)/EWT(1)/EPF(n)-2/BDS/T-2/ES(w)-2--AFFTC/ASD/
 AFWL/SSD--Ps-4/Pd-4/Pab-4/Pu-4--WN/IJP(C) s/0057/63/033/005/0631/0635
 ACCESSION NR: AP3000021

AUTHOR: Sakhnovskiy, E. G.

TITLE: Allowing for anisotropy of the conductivity in the Rayleigh
magnetohydrodynamic problem

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 33, no. 5, 1963, 631-635

TOPIC TAGS: flow of gases, magnetohydrodynamics, Rayleigh problem

ABSTRACT: There is considered the flow of a weakly ionized viscous gas in half-space, but neglecting compressibility of the gas and slippage of the ions relative to the gas. The flow is assumed to be initiated at $t = 0$ by a thin impermeable plate with finite conductivity, separating the region of the gas from the stationary solid conductor and having a velocity $v(t)$ in the direction of the y -axis; a uniform magnetic field is assumed to be acting normal to the plate. According to Uflyand, Ya. S. (PMM, 26, No5, 836, 1962) the problem can be reduced to solution of a set of equations written in terms of Laplace transforms of complex functions of dimensionless parameters of the

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ACCESSION NR: AP3000021

velocity and field components. The set can, in turn, be reduced to fourth order equation, the solution of which must satisfy the condition for sticking of the gas to the plate. The solution of the set, satisfying the boundary conditions is adduced. Actual numerical calculation is difficult. Appropriate substitutions lead to the equations for the case of isotropic conductivity and to the classical solution of the Rayleigh magnetohydrodynamic problem. It is noted that the problem of the case when the entire solid conductor at the gas boundary moves with velocity v can be solved analogously. Orig. art. has: 16 sets of equations and 2 figures.

ASSOCIATION: Fiziko-tekhnicheskiy Institut im. A. F. Ioffe AN SSSR, Leningrad
(Physical-Technical Institute, Leningrad)

SUBMITTED: 03Nov62

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: PH

NR REF SOV: 003

OTHER: 000

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Card 2/2

ACCESSION NR: AP4040572

S/0040/64/028/003/0474/0482

AUTHOR: Sakhnovskiy, E. G. (Leningrad)

TITLE: Single fluid equations of dynamics of partially ionized gas in a strong magnetic field

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 3, 1964, 474-482

TOPIC TAGS: fluid dynamics, ionized gas, magnetic field, Larmor rotation, anisotropy, solid medium, ionized plasma, Maxwell distribution

ABSTRACT: The author constructs a closed system of equations describing the behavior of the electronic, ionic, and neutral gases composing a partially ionized plasma, as a whole. From this system the author obtains, as special cases, known equations of isotropic magnetic hydrodynamics and also single-fluid equations for the dynamics of completely ionized gas. With the aid of these results he is able to study certain other limiting cases, e.g., flow of weakly ionized gas. The following assumptions are made: 1) Monoatomic gas is considered. 2) The interaction between particles (including Coulomb particles) is describable in terms of pairwise collisions. 3) The effects relative to nonelastic collisions are not considered. 4) The macroscopic parameters of the gas vary little at distances

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ACCESSION NR: APL040572

of the order of the effective length of the free run and during a time of the order of time between collisions. 5) The temperatures $T_e = T_i = T_a = T$; T_α is temperature, the index α denotes the component (electron, ion, neutron). 6) It is assumed that $\sqrt{m_e/m_i} \ll 1$, where m_α is the mass of an α -particle. 7) The gas is assumed electrically neutral, i.e., $n_e e_e + n_i e_i + n_a e_a \approx 0$, where n_α and e_α are the partial numerical density and charge of an α -component. Assuming $e_i = -Ze_e = Ze$, the author obtains the condition for the concentration $n_e \approx Zn_i$. The possibility of existence of a weak volume charge is accounted for in the Maxwell equations via $\text{div } D = \rho_e$, where $\rho_e = e(Zn_i - n_e)$ is the volume charge, Z is the charge number, and D is the vector of electrical induction. Orig. art. has: 40 formulas.

ASSOCIATION: Fiziko-tekhnicheskii in-t AN SSSR (Physicotechnical Institute, AN SSSR)

SUBMITTED: 27Dec63

DATE ACQ: 19Jun64

ENCL: 00

SUB CODE: ME

NO REF SOV: 006

OTHER: 006

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ACCESSION NR: AP4043288

S/0040/64/028/004/0670/0677

AUTHOR: Sakhnovskiy, E. G. (Leningrad)

TITLE: Nonstationary planeparallel flow of a partially ionized gas in a strong magnetic field

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 4, 1964, 670-677

TOPIC TAGS: nonstationary planeparallel gas flow, partially ionized gas, strong magnetic field, magnetic Reynolds number, viscosity anisotropy, Hall effect, transport coefficient

ABSTRACT: The Larmor precession of charged particles in a strong magnetic field produces an anisotropy of the transport coefficients. The influence of the field effect (anisotropy of conductivity) on stationary flow has been investigated previously. The effect of anisotropy on nonstationary flow has been studied only for weakly ionized gases. The author uses the system of equations obtained in his previous work (Prikl. Matem. i Mekhanika 28, #3 (1964)) for the study of partially ionized gas in a nonstationary flow by accounting for the Hall effect, the drift of ions relative to neutral particles, and the anisotropy of viscosity. The moving

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L 14985-65 EWT(1)/EWP(m)/EPA(sp)-2/EWG(v)/EWA(d)/EPR/EPA(w)-2/T-2/EWA(m)-2 Pd-1/
Pe-5/Pab-24/Pe-4/Pi-4 IJP(c)/SSD(b)/SSD/AEDC(a)/ASD(a)-5/AFWL/ASD(f)-2/AS(mp)-2/
ACCESSION NR: AP5000282 AFETR/AFTC(a)/ESD(gs)/ESD(t) S/0010/64/028/006/1143/1146

AUTHOR: Sakhnovskiy, E. G. (Leningrad)

TITLE: Effect of Larmor gyration of charged particles on unsteady state temperature field in shallow channel

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 6, 1964, 1143-1146

TOPIC TAGS: temperature distribution, Hall effect, Larmor frequency, incompressible flow, magnetic Reynolds number, viscous flow, periodic motion, hydrodynamic flow, MHD flow, electric conductivity

ABSTRACT: The temperature distribution in a cross section of a shallow channel with constant wall temperatures and constant pressure drop was determined analytically. The energy equation is written under the conditions of incompressible flow, constant degree of ionization, and small magnetic Reynolds number. It is given in the form

$$\frac{\partial T}{\partial t} = C^2 \frac{\partial^2 T}{\partial x^2} + F(z, t)$$

where $F(z, t)$ is a function of viscous dissipation and joule effect. The nonhomogeneous part of the equation is considered to be an even-function of z , and in the Card 1/2

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ACCESSION NR: AP5000282

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absence of any external electric fields the solution for $T(z,t)$ is given as the sum of $T_n(z)$ - viscous dissipation, $T(z)$ - joule heating, and $T_t(z,t)$ - the time-dependent component of T . The resulting equation is very complicated in form, and it includes both periodic and aperiodic components in time. The former is due to the Larmor gyration $\omega_e \tau_0 \sim 1$. Analysis of the above equation indicates that: (a) in an isotropic MHD flow ($\omega_e \tau_0 \ll 1$) the damping coefficient increases relative to the purely hydrodynamic flow case; (b) the anisotropic electrical conductivity is lower than the isotropic conductivity; and (c) in a fully ionized case Larmor gyration lowers the damping coefficient. Orig. art. has: 31 equations.

ASSOCIATION: Fiziko-tekhnicheskii institut AN SSSR (Institute of Engineering Physics, AN SSSR)

SUBMITTED: 17Jul64

ENCL: 00

SUB CODE: ME, TD

NO REF SOV: 004

OTHER: 001

Card 2/2

L 53647-65 EWT(1)/EWP(m)/EWA(d)/FCS(k)/EWA(1) Pd-1

ACCESSION NR: AP5013377

UR/0207/65/000/002/0088/0091

AUTHOR: Sakhnovskiy, E. G. (Leningrad)

TITLE: Viscous drag and heat motion in the flow of a partially ionized medium along a plane channel, allowing for an anisotropic transport coefficient

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 2, 1965, 88-91

TOPIC TAGS: viscous flow, plasma flow, temperature field, MHD, magnetic field, Hartman number, velocity distribution

ABSTRACT: The author has reproduced his previous results (PMM, 1964 T.28, No. 4 and T.28 vyp. 6) on wall skin friction and temperature gradients in a plane channel MHD flow where the flow is assumed to be viscous, incompressible, of constant ionization, and under a strong magnetic field. These results are calculated numerically and plotted as functions of the Hartman number M for a set of electron and ion Hall parameters. For $\omega_e \tau_0 \ll 1$ increase in M^0 causes a decrease in the skin friction which has its maximum at $M = 0$. The joule heating, on the other hand, attains a maximum at $M = 1.6$. For $\omega_e \tau_0 = 1$, $\omega_i \tau_i \ll 1$, if one includes anisotropy effects of the electrical conductivity, only a slight change is noticed in the skin friction

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ACCESSION NR: AP5013377

or heat flow as compared with the case of homogeneous electrical conductivity. Finally, electron and ion Larmor gyrations are shown to change the above curves considerably, especially as a function of the ionization level. Orig. art. has: 13 equations and 4 figures.

ASSOCIATION: Fiziko-tehnicheskiy institut AN SSSR (Physico-Technical Institute, AN SSSR)

SUBMITTED: 17Jul64

ENCL: 00

SUB CODE: EM, ME

NO REF SOV: 004

OTHER: 001

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Card 2/2

62550-65 EWP(m)/EWP(1)/FCS(k)/EWA(d)/EWA(1) Pd-1
 UR/0207/65/000/003/0011/0018
 ACCESSION NR: AP5018189

AUTHOR: Sakhnovskiy, E. G. (Leningrad)

TITLE: Effect of the viscosity anisotropy on a plane parallel flow of an ionized medium in a coplanar magnetic field

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1965, 11-18

TOPIC TAGS: MHD, magnetic field, ionized gas flow, incompressible flow, viscous flow, anisotropic medium, electric field, cyclotron frequency

ABSTRACT: The effect of the anisotropic viscosity coefficient on the flow of an ionized incompressible gas in a planar channel was investigated analytically. The degree of ionization is assumed to remain constant and the thermal conductivity coefficient is independent of temperature. The channel is infinite in the x- and y-directions and is bounded by the planes $z = a$ and $z = -a$. The flow is assumed to be of Couette type and the anisotropic viscosity is given by

$$\eta_1(B) = \eta_2(2B) = \frac{1 + \frac{1}{2} \frac{\omega_c^2 \tau_i^2 B^2}{1 + \frac{1}{2} \frac{\omega_c^2 \tau_i^2 B^2}}}{1 + \frac{1}{2} \frac{\omega_c^2 \tau_i^2 B^2}{1 + \frac{1}{2} \frac{\omega_c^2 \tau_i^2 B^2}}}, \quad \eta_3 = \frac{\frac{1}{2} \omega_c \tau_i B (1 - \epsilon_2)}{1 + \frac{1}{2} \frac{\omega_c^2 \tau_i^2 B^2}{1 + \frac{1}{2} \frac{\omega_c^2 \tau_i^2 B^2}}}$$

$$\left(\omega_c \tau_i = \frac{ZeB_0}{m_i \nu_i}, \quad \epsilon_2 = \eta_2 / \eta^{(0)} \right)$$

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ACCESSION NR: AP5018189

where B is in the x-y plane. From the generalized Ohm's law j_z is shown to be zero, whereas j_x and j_y are given by

$$j_x = \frac{1}{1 + 2(1-s)^2 \omega_i \tau_{ia} \omega_e \tau_{ea} B^2} \left\{ E_z - \frac{Z_s \omega_e \tau_{ea}}{(1+Z_s)GN} P_z + 2(1-s)^2 \omega_i \tau_{ia} \omega_e \tau_{ea} \left[B_z^2 E_x + B_z B_y E_y + B_x B_y E_y + \frac{Z_s}{1+Z_s} \left(B_y \frac{\partial p}{\partial z} - \frac{\omega_e \tau_{ea}}{GN} B_z^2 P_z \right) - \frac{B_y}{(1-s)GM^2} \frac{\partial}{\partial z} \left(\frac{s\eta_2 - \eta_1}{B} \left(B_x \frac{\partial u_y}{\partial z} - B_y \frac{\partial u_x}{\partial z} \right) \right) \right] \right\}$$

$$j_y = \frac{1}{1 + 2(1-s)^2 \omega_i \tau_{ia} \omega_e \tau_{ea} B^2} \left\{ E_y + 2(1-s)^2 \omega_i \tau_{ia} \omega_e \tau_{ea} \left[B_z B_y E_x + B_y^2 E_y - \frac{Z_s}{1+Z_s} \left(B_z \frac{\partial p}{\partial z} + \frac{\omega_e \tau_{ea}}{GN} B_z B_y P_z \right) + \frac{B_x}{(1-s)GM^2} \frac{\partial}{\partial z} \left(\frac{s\eta_2 - \eta_1}{B} \left(B_z \frac{\partial u_y}{\partial z} - B_y \frac{\partial u_x}{\partial z} \right) \right) \right] \right\}$$

($\omega_e \tau_{ea} = \frac{eB_0}{m_e \nu_{ei}} N = \frac{B_0^2 \epsilon_0 \mu_0}{\rho U_0}$)

First, a solution is attempted for the stationary flow with and without pressure gradients. For $s = 1$ (fully ionized case) the solution yields for the induced magnetic field

$$B_z = k_1 z + b_1, \quad B_y = k_2 z + b_2$$

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where

$$b_1 = \cos \varphi - k_1, \quad b_2 = \sin \varphi - k_2$$

and the velocity components in a pressure gradient field become

$$u_x(z) = \frac{1}{2} p_0 R^2 (1 - z^2) (D_1 + D_2 + D_3) \\ u_y(z) = \frac{1}{2} p_0 R^2 (1 - z^2) (D_1 + D_2 + D_3)$$

where the D 's are complicated functions of cyclotron frequencies and collision times for the ions and electrons. Next, a solution is given for the unsteady problem, again assuming $s = 1$, with initial and boundary conditions

$$B_x(z, 0) = B_x(\pm 1, t) = B_{0x} = \cos \varphi, \\ B_y(z, 0) = B_y(\pm 1, t) = B_{0y} = \sin \varphi$$

For the flow with constant pressure gradient, the velocity field is given by

$$u_x(z, t) = \frac{p_0 R^2}{2} (1 - z^2) - 2 p_0 R^2 \sum_{n=0}^{\infty} \frac{(-1)^n}{\lambda_n^2} \cos \lambda_n z \exp \frac{-\lambda_n^2 t}{R^2} \\ u_y = 0$$

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ACCESSION NR: AP5018189

for $\varphi = 0$ and $\pi/2$. Orig. art. has: 30 equations.

ASSOCIATION: none

SUBMITTED: 31Jan65

ENCL: 00

SUB CODE: ME, EM

NO REF SOV: 006

OTHER: 000-10

Card 4/4

SAKHNOVSKIY, E.G., (Leningrad)

Viscous friction and heat flow during the motion of a partially ionized medium in a plane channel making allowance for the anisotropy of the transfer coefficients. PMTF no.2:88-91 Mr-Ap '65. (MIRA 18:7)

SOV/99-58-11-7/9

AUTHOR: Gavrilko, V.M., and Lovlya, S.A., Candidates of Mechanical Sciences; Kuz'mina, N.A., Maslovskiy, Ye.A., and Sakhnovskiy, G.N., Engineers

TITLE: Experience in Restoring the Water Permeability of Filters in Water Wells by Means of A Detonating Cord
(Opyt vosstanovleniya vodozakhvatnoy sposobnosti fil'trov vodozabornykh skvazhin vzryvom detoniruyushchego shnura)

PERIODICAL: Gidrotekhnika i melioratsiya, 1958, Nr 11, pp 47 - 52 (USSR)

ABSTRACT: A new method for cleaning the filters of wells is based on the effect of pressure waves, produced by the detonation of long blasting charges of detonating cords, placed along the axis of the well. In the experiments conducted by the authors, from 1 to 4 sections of the detonating cord DShV (corresponding 13 - 52 gr of VV) were used for each running meter of filters.

Card 1/2

SOV/99-58-11-7/9

Experience in Restoring the Water Peremeability of Filters in Water Wells
by Means of A Detonating Cord

This produced at close range pressure waves of up to 10,000 kg/sq cm. It was found that the pressure waves not only freed the filters of sediments, but also proceeded into the adjacent rock formations. The authors give a detailed description of the blasting procedures, and the savings accomplished by their method. There are 3 photos, 1 table, and 1 set of diagrams.

Card 2/2

SAKHNOVSKIY, I.B. (Khar'kov)

Friend of patients. Med. sestra 20 no.4:58 Ap '61. (MIRA 14:5)
(SHUVAEVA, TAT'IANA NIKONOVNA)

SAKHNOVSKIY, I.B. (Kislovodsk)

Antonina Pavlovna Kozlova. Med.sestra 17 no.3:45-46 Mr '58.
(KOZLOVA, ANTONINA PAVLOVNA) (MIRA 11:4)

SAKHNOVSKIY, I.B. (Khar'kov)

True daughter of the people. Med. sestra 20 no.3:47-48 Mr '61.
(MIRA 14:5)

(MARTYNOVA, MARIIA IVANOVNA)

SAKODYNSKIY, K.I.; VOLKOV, S.A.; MALAFEYEV, N.A.; BRAZHNIKOV, V.V.;
ZHAVORONKOV, N.M., akademik

Separation in preparative columns. Dokl. AN SSSR 148 no.2:394-
396 Ja '63. (MIRA 16:2)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova.
(Gas chromatography)

SAKHOVSKIY, K. V.

Reinforced concrete construction. Izd. h-e perer. i dop. Leningrad, ONTI, Glavnaia
redaktsiia stroitel'noi literatury, 1935-

IU

SAKHNOVSKIY K. V.

Reinforced concrete construction
(50-19024)

Moskva, Gos. izd-vo stroit. lit-ry, 1946. 378 p.

TH1501.S28

SAKHNOVSKIY, K. V.

SAKHNOVSKIY, K. V.

35264. Predvaritel'no Napryazhennye Zhelezobetonnye Rezervuary. Trudy IV
Vsesoyuz. Konf-Tsil Po Beton i Zhelezobeton. Konstruktsiyam. Ch. I. M-L.
1949, S. 134-45

SO: Letopis'Zhurnal'nykh Statey Vol. 34, 1949 Moskva

SAKHNOVSKIY, K.V.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
<u>Sakhnovskiy, K.V.</u>	"Ferroconcrete Structures" (textbook, 7th edition)	Leningrad Construction Engineering Institute

SON W-30604, 7 July 1954

Sakhnovskiy, K.V.

SAKHNOVSKIY, K.V., zasluzhennyy deyatel' nauki i tekhniki, doktor tekhn.
nauk, prof.

Modern prestressed reinforced concrete structural components.
Biul.tekh.inform. 3 no.1:17-22 Ja '57. (MIRA 10:10)
(Prestressed concrete)

SELUYANOV, Mikhail Pavlovich, inzh.; DRABKIN, Grigoriy Matveyevich, inzh.;
SAKHNOVSKIY, K.V., prof., doktor, tekhn.nauk, retsenzent; D'YAKOV,
M.Ya., kand.tekhn.nauk, nauchnyy red.; KAPLAN, M.Ya., red.izd-va;
VORONETSKAYA, L.V., tekhn.red.

[Multistoried industrial buildings built of large construction
elements] Mnogoetazhnye proizvodstvennye zdaniia iz krupnoraz-
mernykh elementov. Leningrad, Gos.izd-vo lit-ry po stroit.,
arkhit. i stroit.materialam, 1959. 124 p. (MIRA 12:4)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Sakhnovskiy).

(Factories--Design and construction)
(Precast concrete construction)

SAKHNOVSKIY, Konstantin Viktorovich, prof., doktor tekhn.nauk; KELDYSE,
V.M., prof., doktor tekhn.nauk, retsenzent; TREPENENKOV, R.I.,
dotsent, kand.tekhn.nauk, nauchnyy red.; KOTIK, B.A., red.
izd-va; GILSON, P.G., tekhn.red.

[Reinforced concrete structures] Zhelezobetonnye konstruktsii.
Izd. 8., perer. Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt. i
stroit. materialam, 1959. 839 p. (MIRA 12:2)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Sakhnovskiy, Keldysh).

(Reinforced concrete construction)

SAKINOVSKIY, K.V., prof.

Large-span precast reinforced concrete shells in Leningrad.
Bet. i zhel.-bet. 8 no. 5:193-198 My '62. (MIRA 15:6)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSR.
(Leningrad—Roofs, Shell) (Precast concrete construction)

AISTOV, N.N., prof., doktor tekhn. nauk; VASIL'YEV, B.D., prof., doktor tekhn. nauk; IVANOV, V.F., prof., doktor tekhn. nauk; SAKHNOVSKIY, K.V., prof., doktor tekhn. nauk; SMIRNOV, N.A., prof.; ORLOV, A.I., dots., kand. tekhn. nauk; SHIFRIN, S.M., prof., doktor tekhn. nauk; Prinimali uchastiye: AKIMOVA, L.D., kand. tekhn. nauk, dots.; SPIRIDONOVA, O.M., kand. tekhn. nauk, dots.; MAKUKHIN, V.L., nauchnyy red.; STAROVOYTOV, I.F., inzh., red. izd-va; PUL'KINA, Ye.A., tekhn. red.

[The history of building practices] Istoriia stroitel'noi tekhniki. [By] N.N.Aistov i dr. Pod obshchei red. V.F.Ivanova. Leningrad, Gosstroizdat, 1962. 560 p. (MIRA 15:12)

1. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Vasil'yev, Sakhnovskiy).

(Building)

SAKHOVSKIY, K.V., doktor tekhn. nauk, prof., retsenzent; MOROZOV, A.P., red.; VOLKOV, G.F., inzh., red.; REYZ, M.B., red. izd-va; ROZOV, L.K., tekhn. red.

[Mesh-reinforced concrete elements in construction] Armo-
tsementnye konstruksii v stroitel'stve; sbornik nauchnykh
soobshchenii. Leningrad, Gosstroizdat, 1963. 177 p.
(MIRA 16:4)

1. Akademiya stroitel'stva i arkhitektury SSSR. Leningradskiy
filial. 2. Deystvitel'nyy chlen Akademii stroitel'stva i ar-
khitektury SSSR (for Sakhnovskiy, Morozov).

(Precast concrete construction)

(Roofing, Concrete)

KLYACHKO, A.L., inzh.; ODINOV, M.I., inzh.; GLUKHOVSKIY, K.A.,
kand. tekhn. nauk, inzh., red.; GVOZDEV, A.A., doktor
tekhn. nauk, prof., red.; GORENSHTEYN, B.V., kand.
tekhn. nauk, red.; KOSTYUKOVSKIY, M.G., kand. tekhn.
nauk, red.; KRYLOV, N.A. doktor tekhn. nauk, red.;
KUREK, N.M., kand. tekhn. nauk, red.; LEVINSKIY, L.G.,
inzh., red.; LOBANOV, N.D., inzh., red.; MOROZOV, A.P.,
inzh., red.; ONIASHVILI, O.D., doktor tekhn. nauk, prof.,
red.; SAKHNOVSKIY, K.V., doktor tekhn. nauk, prof., red.;
FILIN, A.P., doktor tekhn. nauk, prof., red.; YEFIMOV,
A.D., inzh., nauchn. red.

[Three-dimensional structural elements in the U.S.S.R.;
materials of the All-Union Conference on Precast
Reinforced Concrete Three-Dimensional Elements held in
November 13-17, 1962 in Leningrad] Prostranstvennye kon-
struktsii v SSSR; po materialam pervogo Vsesoiuznogo so-
veshchaniia po sbornym zhelezobetonnyim prostranstvennym
konstruktsiiam, sostoiavshegosia 13-17 noiabria 1962 g.
v Leningrade. Leningrad, Stroiizdat, 1964. 461 p.

(MIRA 17:11)

1. Nauchno-tekhnicheskoye obshchestvo stroitel'noy indu-
strii SSSR. Leningradskoye otdeleniye.

IVANOV, V.F., doktor tekhn. nauk, prof. [deceased]; ONUFRIYEV, N.M., doktor tekhn. nauk, prof.; ROT, A.V., kand. arkh. dots.; GRIGOR'YEVA, A.M., arkh.; ZAKHAR'YEVSKAYA, M.A., kand. tekhn. nauk; ZEL'TEN, L.V., kand. arkh.; KRAV'SKOY, V.A., arkh.; KUNTSMAN, M.S., kand. arkh. dots.; LOKHANOV, G.I., arkh.; NIKOLAYEV, A.I., doktor tekhn. nauk, prof.; OSIFOV, Ye.A., kand. tekhn. nauk, dots.; SAKHNOVSKIY, K.V., doktor tekhn. nauk prof.; TRULL', V.A., kand. tekhn. nauk, dots.; KARRQ V.M., inzh., nauchn. red.; MARGOLIN, A.G., inzh., nauchn. red.

[Elements of buildings and structures] Konstruktsii zdani i sooruzhenii. Leningrad, Stroiizdat, 1965. 487 p.

(MIRA 18:12)

SAKHNOVSKIY, L.V., kandidat tekhnicheskikh nauk; KRASNOVSKIY, N.V., kandidat tekhnicheskikh nauk.

Instrument for speedy determination of moisture in lumber. Der. 1-leso-khim.prom. 2 no.7:6-9 JI '53. (MLRA 6:5)

1. Tsentral'nyy nauchno-issledovatel'skiy institut mekhanicheskoy obrabotki drevesiny. (Wood--Moisture)

SAKHNOVSKIY, L.V.
KRASNOVSKIY, N.V., kandidat tekhnicheskikh nauk; SAKHNOVSKIY, L.V.,
kandidat tekhnicheskikh nauk

Standardizing wood drying requirements. Der.prom. 4 no.9:5-9 S '55.
(MLRA 8:11)

1. Tsentral'nyy Nauchno-issledovatel'skiy institut mekhanicheskoy
obrabotki drevesiny
(Lumber--Drying) (Wood--Moisture)

KRASNOVSKIY, N.V., kandidat tekhnicheskikh nauk. SAKHNOVSKIY, L.V., kandidat tekhnicheskikh nauk.

Ways of achieving the norm requirements for quality in chamber drying
lumber. Der.prom.5 no.6:3-6 Je '56. (MIRA 9:9)

1. TSentral'nyy nauchno-issledovatel'skiy institut mekhanicheskoy obra-
botki drevesiny.
(Lumber--Drying)

SAKHNOVSKIY, L.V.; KIRIN, N.S.

Multiunit remote-controlled psychrometer. Der.prom.6 no.12:6-8
D '57. (MIRA 10:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut mekhanicheskoy obrabotki dereva (Leningradskoye otdeleniye).
(Thermometers) (Lumber--Drying) (Electric instruments)

SERGOVSKIY, Pavel Semenovich; STERLIN, E.M. kand. tekhn. nauk;
BAGDAT'YEV, Ye.Ye., inzh.; SAKHNOVSKIY, Leonid
Vladimirovich, dots., kand. tekhn. nauk; SOKOLOV, P.V.,
red.

[Equipment for the hydrothermal processing of wood] Obo-
rudovanie gidrotermicheskoi obrabotki drevesiny. Mo-
skva, Lesnaya promyshl., 1964. 326 p. (MIRA 18:1)

1. Kafedra lesopil'no-stroitel'nykh proizvodstv lenin-
gradskoy lesotekhnicheskoy akademii im. Kirova (for
Sakhnovskiy).

SAUNINA, L.; SAKHNOVSKIY, M.

By means of a tireless search. Sov. profsoiuzy 7 no.14:13-16 J1
'59. (MIRA 12:10)

1.Zamestitel' predsedatelya zavkoma Khar'kovskogo zavoda transportnogo mashinostroyeniya imeni Malysheva (for Saunina). 2.Nachal'nik byuro peredovykh metodov truda Khar'kovskogo zavoda transportnogo mashinostroyeniya imeni Malysheva (for Sakhnovskiy).
(Kharkov--Locomotive works)

SAKHNOVSKIY, M.

Hidden potentialities are at your elbow. Sov.profsoiuzy 19
no.2:10 Ja '63. (MIRA 16:2)
(Kharkov--Machinery industry)

SAKHNOVSKIY, M. M.

25936. Izgotovlenie opltnogo svarnogo proletnogo stroeniya. Trudy po avtomat. svarke pod tlyusom (In-t elektrosvarki im. Patona), sb. 6, 1949, S. 16-35.

SO: Knizhnaya Letopis', Vol. 1, 1955

SAKHNOVSKIY, M.M., inzh., laureat Stalinskoy premii; KOVEL'MAN, G.M., kand.
tekh.nauk

Economizing sheet steel in making metal construction elements.
Stroi.prom. 27 no.7:15-18 J1 '49. (MIRA 13:2)
(Sheet steel)

SAKHNOVSKII, M. M.

408-K WELD ASSEMBLY OF STEEL FRAMEWORK OF HIGH BUILDINGS
(IN RUSSIAN); M.M. Sakhnovskii and A. D. Zevin. Avto. Delo
(Welding) v. 21, Mar. 1950, p. 18-19.

- Possibility of attaching horizontal braces to the
body of columns in the framework of high buildings without
use of the "overhead" weldin position. Optimum gap
between brace and column is indicated. Steel backings
were found more applicable than asbestos or copper. (K
general, T 26, CH)

SAKHOVSKIY, M.M.

USSR/Engineering - Flame Cutting, Jul 51
Processes

"Oxyacetylene Cutting in Fabrication of
Welded Structures for Building Industry,"
M. M. Sakhovskiy, Cand Tech Sci, Laureate
of Stalin Prize

"Avtogen Delo" No 7, pp 19-22

Reviews exptl data on effect of oxyacety-
lene cutting on properties of edges and
welded joints. Discusses patterns for
flame cutting and technology of oxyacety-
lene cutting, including deformations

200143

USSR/Engineering - Flame Cutting, Jul 51
Processes (Contd)

during cutting process, prepn of edges and
layout of cutting operations.

200143

SAKHNOVSKIY, M.
SAUNINA, L.; SAKHNOVSKIY, M.

Spread progressive work practices among all workers. Sov. profso-
iuzy 3 no.9:25-28 S '55. (MIRA 8:12)

1. Zamestitel' predsedatelya zavkoma Khar'kovskogo zavoda tran-
sportnogo mashinostroyeniya (for Saunina) 2. Chlen komissii po
proizvodstvenno-massovoy rabote zavkoma (for Sakhnovskiy).
(Technical education)

KABANOV, Ivan Andreyevich; RABINOVICH, Sergey Yul'yevich; ~~SAKHNOVSKIY,~~
Mikhail Mikhailovich; TITOV, Aleksandr Mikhaylovich; SURYGINA, E.,
tekhn.red.

[New processes for the manufacture and assembly of sheet-metal
elements of blast furnaces] Novaya tekhnologiya izgotovleniya
i montazha listovykh konstruktsii domennoi pechi; iz opyta orga-
nizatsii "Ukrlevstal'konstruktsii" Ministerstva stroitel'stva
USSR. Kiev, Gos.izd-vo lit-ry po stroit. i arkhitekt. USSR, 1960.
39 p. (MIRA 14:1)

(Blast furnaces--Design and construction)
(Sheet-metal work)

SAKHNOVSKIY, M.

Work valor of the collective. Sov.profsoiuzy 17 no.10:12 My '61.
(MIRA 14:5)

1. Chlen zavkoma profsoyuza zavoda transportnogo mashinostroyeniya
imeni Malysheva, g. Khar'kov.
(Kharkov--Diesel engines) (Socialist competition)

SAKHNOVSKIY, M.M., kand.tekhn.nauk

Another discussion of the strength of St. 3 open-hearth carbon steel. Prom.stroi. 39 no.7:22-25 '61. (MIRA 14:7)

1. Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo transporta.

(Ukraine--Steel, Structural)

SAKHNOVSKIY, M.M.

Efficiency of using welded steel structures in building. Avtom. svar.
15 no.7:58-60 JI '62. (MIRA 15:7)

1. Dnepropetrovsky institut inzhenerov zheleznodorozhnogo transporta.
(Structural frames--Welding)

SAKHNOVSKIY, M.M., kand.tekhn.nauk

Approximate determination of the weight of parts of
steel elements. Prom. stroi. 40 no.9:57-58 '62.

(MIRA 15:11)

1. Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo
transporta.

(Steel, Structural)

AYDAROV, G.A., inzh.; BELYAYEV, B.I., inzh.; LEVIN, L.I., inzh.;
RYABOV, A.F., inzh.; SAKHNOVSKIY, M.M., kand. tekhn.
nauk; CHESNOKOV, A.S.; SHILOVTSEV, D.P.; GAY, A.F., kand.
tekhn.nauk, nauchn. red.; GORDEYEV, P.A., red.; GOL'BERG,
T.M., tekhn. red.; RODIONOVA, V.M., tekhn. red.

[Manufacture of steel structures] Izgotovlenie stal'nykh
konstruktsii. Moskva, Gosstroizdat, 1963. 401 p.
(MIRA 16:8)

(Steel, Structural)

SAKHNOVSKIY, M.M., kand. tekhn. nauk

Static strength of welded joints in elements of low-carbon steel.
Mat. po met. konstr. no. 8:180-185 '64. (MIRA 18:5)

SAKHNOVSKIY, M.M., kand. tekhn. nauk

Basic conditions for the efficiency of welded steel structures
in building. Mat. po met. konstr. no.9:144-161 '65.
(MIRA 18:11)

KOVAL'SKIY, L.V.; SAKHNOVSKIY, M.Yu.

Error in measuring spatial illuminance using a spherical radiation detector. Svetotekhnika 10 no.3:20-23 Mr '64. (MIRA 17:3)

1. Chernovitskiy gosudarstvennyy universitet.

SAKHNOVSKIY, M.Yu.

Optical properties of magnesium oxide. Opt. i spektr. 18 no.1:179-
182 Ja '65. (MIRA 18:4)

RVACHEV, V.P.; GUMINETSKIY, S.G.; SAKHNOVSKIY, M.Yu.

Optical parameters of plant leaves in the spectral interval of
255-1000 nmk. *Biofizika* 10 no.4:658-664 '65. (MIRA 18:2)

1. Chernovitskiy gosudarstvennyy universitet, Chernovtsy.

L 43869-65 EWT(1)/EEC(k)-2 IJP(c)

ACCESSION NR: AP5006438

S/0051/65/018/003/0486/0494

AUTHOR: Ryachev, V. P.; Sakhnovskiy, M. Yu.

20
B

TITLE: Theory and application of an integral photometer for the investigation of objects with arbitrary scattering indicatrices

21

SOURCE: Optika i spektroskopiya, v. 18, no. 3, 1965, 486-494

TOPIC TAGS: photometry, reflection, coefficient, transmission coefficient, absolute photometry, spherical photometer, integral photometer

ABSTRACT: In view of the discrepancies between absolute values of the reflection coefficient obtained with spherical photometers by various investigators, the authors, claiming that the reason for the discrepancies is failure to take direct account of the influence of the scattering indicatrix of the investigated objects, derive photometric relation for a spherical photometer and for objects having arbitrary scattering indicatrices. Separate relations are derived for objects located on the surface of the sphere and in the center of the sphere. An experimental procedure for the determination of the absolute values of the reflection

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L 43869-65

ACCESSION NR: AP5006438

and transmission coefficients, using a specially designed spherical photometer, shown in Fig. 1 of the Enclosure, is also described. The measurements necessary to determine the reflection and transmission coefficients by means of the formulas derived in the paper are then described briefly. Orig. art. has: 6 figures and 39 formulas.

ASSOCIATION: None

SUBMITTED: 25Apr64

ENCL: 01

SUB CODE: OP

NR REF SOV: 007

OTHER: 008

Card 2/3

L 43869-65

ACCESSION NR: AP5006438

ENCLOSURE: 01

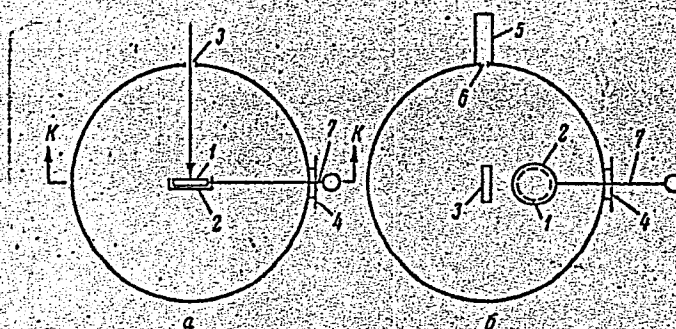


Fig. 1. Construction diagram of spherical photometer.

1 - Sample holder, 2 - light-tight cap, 3 - entrance aperture, 4 - scale, 5 - radiation receiver, 6 - slit, 7 - rod.

a - Horizontal section, b - section KK

LL
Card 3/3

L 40895-66 ENT(m)/EMP(t)/ETI IJP(c) JD

ACC NR: AP6019660

SOURCE CODE: UR/0368/66/004/006/0568/0571

AUTHOR: Rvachev, V. P.; Sakhnovskiy, M. Yu.

ORG: none

TITLE: Optical properties of magnesium oxide in ultraviolet light
27 ~ 1

SOURCE: Zhurnal prikladnoy spektroskopii, v. 4, no. 6, 1966, 568-571

TOPIC TAGS: magnesium oxide, optic property, UV light, UV optic material, light reflection coefficient

ABSTRACT: The value of the coefficient of diffuse reflection for a freshly sprayed layer of MgO about 3 mm thick was studied by means of an integral photometer. The optical properties of MgO were measured at 220-1000 mμ, using for this purpose the "two-parametric" theory of the transmission of radiation through a light-scattering medium, and the problem of the accuracy of the measurements is examined. Employing this theory an expression is derived for the absorption coefficient of MgO particles. The error in determining the coefficient of diffuse reflection was about 0.5% for the ultraviolet region and about 0.3% for the visible and infrared regions. A calculation of errors involved when determining the absorption index yielded a total error in this determination of about 25% for the visible and near-infrared

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UDC: 535.34

L 40295-66

ACC NR: AP6019660

and about 15% for the ultraviolet regions. It was concluded that the "two-parametric" theory of M. M. Gurevich (Trudy GOI, Vol. 6, No. 57, 1931) and A. A. Gershun (Trudy GOI, Vol. 11, No. 90, 1936, p. 43) is fully competent. Orig. art. has: 3 figures and 12 formulas.

SUB CODE: 11,20/ SUBM DATE: 25Mar65/ ORIG REF: 011/ OTH REF: 002

Card

2/2 MLP

SAKHNOVSKIY, N.L., inzh.; YURCHAKEVICH, Ye.R., inzh.

Locating of winding insulation damage in operating electrical
machines. Elek. sta. 33 no.8:73-74 Ag '62. (MIRA 15:8)
(Electric machinery--Windings)

SOV/138-58-10-5/10

AUTHORS: ~~Sakhnevskiy~~ N. L.; Ivanova, S. A; Mel'nikova, M. V;
 Ratner, S. B; Reznikovskiy, M. M, and Smirnova, L. A.

TITLE: Wear Testing of Rubber (Ob otsenke istirayemosti
 reziny)

PERIODICAL: Kauchuk i Rezina, 1958, ¹⁷ Nr 10, pp 18 - 22 (USSR)

ABSTRACT: The mechanism of abrasive wear of rubber is imperfectly
 understood. Laboratory tests with different types of
 equipment give inconsistent results, and results of
 laboratory tests do not agree with service or road
 tests. The relations between the three mechanical para-
 meters, F, frictional force; N, normal load, and U,
 rubbing speed are discussed. Three modes of test are
 possible: (a) F, variable, N and U constant, (b) N,
 variable and (c) U, variable. These give respective
 wear indices: V_{NU} , V_{FU} , and V_{NF} where V is expressed
 in cm^3 wear from the specimen. A specific wear in-
 dex, v, is given: $v = V_{NU}/W$ (cm^3/kwh) where W is work
 done against friction. This specific wear index takes
 into account the coefficient of friction μ of the rubber.
 Since μ varies for different rubbers, correlation be-
 tween the indices V_{NU} , V_{FU} and the specific index v,

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Wear Testing of Rubber

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will vary for different rubbers. This is illustrated in Figs. 1, 2 and 3 where the relative wear according to different indices is plotted against filler content in the rubber sample. Actual values for different rubbers of the indices V_{NU} , v , and V_{FU} are given in Table 1. The specific wear index v is calculated only under the constant normal load regime. The final columns in the table give relative values for these indices for comparison with relative values obtained on actual service tests (given in the last column). The index V_{FU} shows best correlation with service or road tests, and it is suggested that this index would be more appropriate when testing rubber intended for tyres. This is brought out further in Fig. 4 where the relative indices of laboratory tests are compared with relative wear in actual road tests. (Symbols 1, 2, 3 and 4 are for tests giving an index V_{FU} , symbols 5 and 6 give V_{NU} and symbol 7 is for index v). While indices v and V_{FU} should have similar correlation, errors can arise when v is taken as an index through changes in temperature at the rubbing surface. The third mode of test with F and N constant and with U variable has received little attention, but is of interest since it represents the conditions of wear

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Wear Testing of Rubber

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through skidding. Wear tests under laboratory conditions and road or service tests have different intensity, particularly as regards temperature. Table 2 compares contact pressure, rubbing speed and temperature for a tyre at 30 km/hr with 3% slip with conditions under the GOST 426-57 (Government Standard) test under constant load conditions on a Grassel test machine. The contact pressure in the laboratory test is very much lower while the temperature is much higher. The wear index V_{NU} is not proportional to the normal load N . However, the product $v\mu$ is proportional to N and is a suitable wear index as has been proved on tests with N varying from 0.5 to 12 kg/cm².

It is suggested that it would be more realistic to conduct laboratory tests at high contact pressures, but to reduce the coefficient of friction by using less abrasive test surfaces. Methods using radioactive tracers could enable the intensity of laboratory tests to be

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brought down to a level which would simulate road tests more exactly and still retain sensitivity of test. There are 4 Figures, 2 Tables and 25 References: 13 English, 3 Soviet, 2 French and 2 German

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti i Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific-Research Institute of the Tire Industry and Scientific-Research Institute of the Rubber Industry)

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SOV/63-4-1-5/31

AUTHORS: Sakhnovskiy, N.L., Smirnova, L.A., Candidate of Technical Sciences

TITLE: The Problem of Wear-Resistance of Rubbers and Methods for Its Improvement (Problema iznosostoykosti rezin i puti yeye povysheniya)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 1, pp 35-41 (USSR)

ABSTRACT: At the present time there is no theory of the wear resistance of rubbers. According to Reference 12 the action of high temperatures and mechanical activation leads to oxidation of the rubber. Wear-resistance is a variable quantity depending on the composition and the properties of the rubber, the design of the tread, the type of road, atmospheric conditions, etc. There is no laboratory method for evaluating the wear-resistance of tires. The wear of the tire made of the new rubber is compared with a control tire. The wear is indicated by the percentage of the wear in the tested tire compared to the control tire and by the wear of the tread measured in mm per 1,000 km. In Soviet tires natural rubber NK, butadiene-styrene rubber BSK

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and polybutadiene rubber SKB is used for treads. The wear in motorcycle races is 1 mm per 100 km, in truck tests 0.2 - 0.25 mm per 1,000 km. For tires in light vehicles with fast starts and frequent braking the rubbers of type BSK are used. In the USSR an oil-filled divinyl-styrene rubber of low-temperature polymerization SKS-30AM is employed in the production of tire treads. Wear-resistance increases with the molecular weight. It is inversely proportional to the content of low-molecular fractions. For every 2.5°C of the lowering of polymerization temperature, the rubber wear-resistance increases by 1%. Severe operating conditions reduce the wear-resistance considerably. At a speed of 113 km/h the mileage of a tire tread is 27,000 km, at 137 km/h it is 14,400 km. Polyurethane rubbers are very wear-resistant but it is difficult to connect them with the tire carcass. The same is true for butyl-rubber. Methylvinyl-pyridine rubbers are too expensive for large-scale application. Divinyl-styrene-carboxylate rubber is very wear-resistant but it has a tendency to scorching. The quality of the filler is determined by the size of the carbon black particles. The physical-chemical properties of various

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blacks and the mechanical properties of the rubbers made with them are shown in Table 6. Synthetic resins, especially those formed on the base of formaldehyde, increase the wear-resistance only under favorable operating conditions. Under severe conditions the resistance of such rubbers is only 70% of the usual types. Polyethylene as filler reduces hysteresis but wear is considerable.

There are 2 graphs, 7 tables, and 51 references, 13 of which are Soviet, 25 English, 12 German, and 1 French.

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AUTHORS: Sakhnovskiy, N.L., Yevstratov, V.F., Smirnova, L.A., Katkov, V.I.

TITLE: Rating of Wear Resistance of Tread Rubbers in Operation Tests of
Tires ⁵

PERIODICAL: Kauchuk i Rezina, 1960, No. 1, pp. 10 - 15

TEXT: With the highly resistant cord being produced at present the wear of the tread in a tire is the basic reason for the eventual failure of a tire. Great importance is therefore being attached to the method of rating the wear resistance of rubber compounds. In this connection the article offers certain recommendations, which are based on the investigations conducted by NIISHP (Scientific Research Institute of the Tire Industry) during the last 3 years. Ordinary road tests are not sufficiently reliable for rating, due to the fact that they cover too wide a range of results, depending upon the conditions under which these road tests have been performed, such as kind and condition of roads, type of automobile, speed, load, position of tire, season, climatic condition, weather etc. A wet road, for instance, is liable to reduce wear of a tire 12 times. More reliable results can be obtained, if a batch of standard and experimental tires are tested simultaneously in one

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motor pool. Under these circumstances a formula for calculating the relative wear resistance can be used which is given in the article. A method of changing the tires from front to rear and vice versa has been developed abroad. Another method consists in testing experimental and standard tires under strictly identical conditions within a comparatively short period of time thus reducing the range of results and obtaining a fairly accurate account of the wear resistance of tread rubbers. The article cites three means of measuring wear of tread, viz. by measuring the depth of grooves, using depth gage, by weighing the tire and by using radioactive isotopes. A special depth gage has been developed by V.V. Nikitin. Buist [Ref. 2] claims that the intensity of wear in the tread of a tire is not constant, but greater in the beginning of the test than subsequently. Thus it was found that intensity of wear of a tire on a passenger car becomes constant only after 500 kilometers of driving. Tests carried out with a Pobeda automobile have confirmed these findings. The intensity of wear and the amount of wear are expressed in 2 graphs shown in the article. Another graph shows the curve representing the run of a 260-20 tire, covering 40,000 km as calculated on the basis of the first measuring of wear. The method of performing road tests with standard tires

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is explained in the article as well as the formula which permits to calculate the relative average wear resistance of the tread. The method recommended for carrying out road tests for rating wear resistance permits results to be obtained in a comparatively short period of time (after about 8-12 thousand km) by reducing the range of results 2-3 times as compared with results of ordinary road tests. There are 6 tables, 4 graphs, 3 diagrams and 10 references; 2 Soviet, 6 English and 2 French.

ASSOCIATION: NIISHP (Scientific Research Institute of the Tire Industry)

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AUTHORS: Sakhnovskiy, N.L., Smirnova, L.A., Yevstratov, V.F.

TITLE: The Dependence of the Wear-Resistance of Protector Rubbers
on Their Composition and Properties

PERIODICAL: Kauchuk i Rezina, 1960, No. 4, pp. 22 - 26

TEXT: The wear-resistance of rubber is studied in the USSR in the following fields: the wear-mechanism in tire casings, development of a composition of wear-resistant rubber, production of tires of a new design, developing methods for the evaluation of wear-resistance, etc. The relationship between the wear-resistance in rubber and some of its other properties, as well as the dependence of the wear-resistance on the type of polymer and carbon black used were studied here. The effects of temperature, mechanical friction and other factors on the wear of rubber were tested. With a variation in the testing conditions the absolute wear on the rubber will differ accordingly. Table 1 shows the figures obtained in the laboratory from tests of the relative wear-resistance in rubber produced from a natural rubber and CK5 (SKB) base. As a result of the laboratory tests it was established that
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with an increase in the rubber modulus, the wear-resistance increases proportionately to the increase in the intensity of the wear (Fig. 2). It appeared that the greatest increase in wear-resistance is found to be under conditions of maximum wear intensity. A study of wear-resistance was also carried out on protector rubber based on SKB, CKC-30AM (SKS-30 AM) and natural rubber polymers. The obtained data revealed that rubber on an SKB base is significantly surpassed by the SKS-30AM rubber. At present SKB in protector rubber is replaced by butadiene-styrene rubber. Natural rubber seemed to surpass SKB rubber, although the former is largely dependent on temperature. Additionally obtained data confirm the existing belief that the wear-resistance is dependent on the molecular weight and that the molecular weight distribution also has an effect on the wear-resistance. The CKI (SKI) rubber was also investigated as one of the new types of synthetic polymers and compared to that of natural rubber. The authors state that the successful solution of the problem for increasing the wear-resistance in rubber can be achieved by organizing a series of systematic investigations in the following manner: 1) a study of the mechanism of the wear in protector rubber under various conditions.

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ditions of operation. This investigation should be carried out in cooperation with automobile plants and road construction organizations. 2) A study of the relationship between the wear-resistance of rubber and its polymer structure and the synthesis of new polymers on the basis of this study, which would yield a highly wear-resistant protector rubber under various conditions of operation. 3) Further investigation of the mechanism of rubber filling and the production of new fillers, which would yield a rubber with a higher wear-resistance. There are 3 tables, 7 figures and 6 non-Soviet references. X

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific Research Institute of the Tire Industry)

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BRODSKIY, G.I.; MEREZHANNYY, S.B.; REZNIKOVSKIY, M.M.; SAKHNOVSKIY, N.L.

Evaluation of service life of protective rubbers. Trudy Nauch.-
issl. inst. shin. prom. no.7:78-90 '60. (MIRA 14:8)
(Rubber--Testing)